I-Chao Shen

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https://jdily.github.io

Research Interests

Computer graphics, vector graphics, data-driven 2D/3D geometry analysis and processing, machine learning.

Education

National Taiwan University — **Taipei, Taiwan**
Ph.D. in Computer Science — *Sep 2017 - Dec. 2020*
Advisor: Bing-Yu Chen.
Thesis: 2D Visual Content Design Driven by Human-Guided Optimization

National Taiwan University — **Taipei, Taiwan**
Master in Information Management and MBA — *Sep 2009 - June 2011*
Advisor: Bing-Yu Chen.
Thesis: Perspective-aware Warping for Seamless Stereoscopic Image Cloning

National Taiwan University — **Taipei, Taiwan**
Bachelor in Information Management — *Sep 2005 - June 2009*

Experiences

Postdoctoral researcher - JSPS Foreign Researchers Fellowship, Tokyo, Japan — *Dec. 2020 -*
Host : Takeo Igarashi

Research Visitor - JST CREST Project, Tokyo, Japan — *Feb 2018 - July 2018, Aug 2019*
Supervisor : Takeo Igarashi

Research Assistant - CMLab, National Taiwan University, Taipei, Taiwan — *Apr 2017 - July 2017*
Supervisor : Bing-Yu Chen

Research Assistant - Imager Lab, The University of British Columbia,
Vancouver, Canada — *Sep 2014 - Mar 2017*
Supervisor : Alla Sheffer

Research Intern - Imagination Lab, Adobe Research, San Jose, CA — *May 2015 - Aug 2015*
Supervisor : Nathan Carr, Duygu Ceylan, Zhaowen Wang

Research Assistant - CITI, Academia Sinica, Taipei, Taiwan — *Sep 2011 - July 2014*
Supervisor : Wen-Huang Cheng

Publications

ODEN: Live Programming for Neural Network Architecture Editing
Chunqi Zhao, I-Chao Shen, Tsukasa Fukusato, Jun Kato, Takeo Igarashi
to appear in ACM Intelligent User Interfaces (IUI) 2022

Per Garment Capture and Synthesis for Real-time Virtual Try-on
Toby Chong, I-Chao Shen, Nobuyuki Umetani, Takeo Igarashi
in proceeding of User Interface Software and Technology (UIST) 2021

Data-driven Sketch Beautification with Neural Feature Representation
I-Chao Shen
IEEE Computer Graphics and Applications (CG&A) 2021

ClipGen: A Deep Generative Model for Clipart Vectorization and Synthesis
I-Chao Shen, Bing-Yu Chen
IEEE Transactions on Visualization and Computer Graphics (TVCG) 2021

Multi-Resolution Shared Representative Filtering for Real-Time Depth Completion
Yu-Ting Wu, Tzu-Mao Li, I-Chao Shen, Hong-Shiang Lin, Yung-Yu Chuang
High-Performance Graphics (HPG) 2021

ClipFlip : Multi-view Clipart Design
I-Chao Shen, Kuan-Hung Liu, Li-Wen Su, Yu-Ting Wu, and Bing-Yu Chen
Computer Graphics Forum, Volume 40, Issue 1, Feb 2021, arXiv:2008.12933 [cs.GR]

Interactive Optimization of Generative Image Modeling using Sequential Subspace Search and Content-based Guidance
Toby Chong Long Hin*, I-Chao Shen*, Issei Sato, and Takeo Igarashi (*: joint first authors)
Computer Graphics Forum, Volume 40, Issue 1, Feb 2021, arXiv:1906.09840 [cs.GR]

ZomeFab: Cost-effective Hybrid Fabrication with Zometools
I-Chao Shen, Ming-Shiuan Chen, Chun-Kai Huang, and Bing-Yu Chen
Computer Graphics Forum, Volume 39, Issue 1, Feb 2020

Director-360: Introducing Camera Handling to 360 Cameras
Hao-Juan Huang, I-Chao Shen, and Liwei Chan
in proceeding of MobileHCI 2020

Perception-Driven Semi-Structured Boundary Vectorization
Shayan Hoshyari, Edoardo Dominici, Alla Sheffer, Nathan Carr, Duygu Ceylan, Zhaowen Wang, I-Chao Shen
ACM Transactions on Graphics (Proceedings of SIGGRAPH 2018).

High-resolution 360 Video Foveated Stitching for Real-time VR
Wei-Tse Lee*, Hsin-I Chen*, Ming-Shiuan Chen, I-Chao Shen and Bing-Yu Chen
Computer Graphics Forum (Proceedings of Pacific Graphics 2017)

A Scalable Active Framework for Region Annotation in 3D Shape Collections
Li Yi, Vladimir G. Kim, Duygu Ceylan, I-Chao Shen, Mengyan Yan, Hao Su, Cewu Lu, Qixing Huang, Alla Sheffer, and Leonidas Guibas
ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2016)

Retargeting 3D Objects and Scenes with a General Framework
Chun-Kai Huang, Yi-Ling Chen, I-Chao Shen, and Bing-Yu Chen
Computer Graphics Forum (Proceedings of Pacific Graphics 2016)

Data-driven Handwriting Synthesis in a Conjoined Manner
Hsin-Yi Chen, Tse-Ju Lin, I-Chao Shen, and Bing-Yu Chen
Computer Graphics Forum (Proceedings of Pacific Graphics 2015)

Gestalt Rule Feature Points
I-Chao Shen and Wen-Huang Cheng
IEEE Transactions on Multimedia (TMM), 17(4), pp. 526-537, 2015

Geometrically Consistent Stereoscopic Image Editing using Patch-based Synthesis
Sheng-Jie Luo, Ying-Tse Sun, I-Chao Shen, Bing-Yu Chen, and Yung-Yu Chuang
IEEE Transactions on Visualization and Computer Graphics (TVCG), 21(1), pp. 56-67, 2015

Stroke-guided Image Synthesis for Skeletal Structure Editing
Sheng-Jie Luo, Chin-Yu Lin, I-Chao Shen, and Bing-Yu Chen
Computer Graphics Forum (Proceedings of Pacific Graphics 2013)

Perspective-Aware Warping for Seamless Stereoscopic Image Cloning
Sheng-Jie Luo, I-Chao Shen, Bing-Yu Chen, Wen-Huang Cheng, and Yung-Yu Chuang
ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2012).

Technical Reports and Preprints

StylePart: Image-based Shape Part Manipulation
I-Chao Shen, Li-Wen Su, Yu-Ting Wu, Bing-Yu Chen
arxiv preprint (*arxiv:2111.10520*)

Accurate Anatomy Transfer using Medical Imaging
I-Chao Shen, Li-An Chung, Bing-Yu Chen
submitted to journal of Computer Graphics Technique

Workshop Papers, Short Papers, Posters

Guided Image Weathering using Image-to-Image Translation
Li-Yu Chen, I-Chao Shen, and Bing-Yu Chen
SIGGRAPH ASIA 2021 Technical Communication

Real-time Image-based Virtual Try-on with Measurement Garment
Toby Chong, I-Chao Shen, Yunfei Qian, Nobuyuki Umetani, Takeo Igarashi
SIGGRAPH ASIA 2021 Emerging Technologies

Transferring Deep Reinforcement Learning with Adversarial Objective and Augmentation
I-Chao Shen, Shu-Hsuan Hsu, and Bing-Yu Chen
IJCAI-PRICAI 2020 Workshop on Knowledge-Based Reinforcement Learning (KBRL)

Large-scale fabrication with interior zometool structure
Ming-Shiuan Chen, I-Chao Shen, Chun-Kai Huang, and Bing-Yu Chen
ACM SIGGRAPH Poster Program 2018

A Deep Learning Based Method For 3D Human Pose Estimation From 2D Fisheye Images
Ching-Chun Chen, Chia-Min Wu, I-Chao Shen, and Bing-Yu Chen.
ACM IUI Poster Program 2018

Retargeting 3D objects and scenes
Chun-Kai Huang, Yi-Ling Chen, I-Chao Shen, and Bing-Yu Chen
ACM SIGGRAPH Poster Program 2015

Painting Photolization
Chien-Wen Jung, I-Chao Shen, Sheng-Jie Luo, Bing-Yu Chen, and Wen-Huang Cheng
ACM SIGGRAPH ASIA Poster Program 2013

Texturing and Deforming Meshes with Casual Images
I-Chao Shen, Yi-Hua Wang, Yu-Mei Chen, Bing-Yu Chen, and Wen-Huang Cheng
ACM SIGGRAPH ASIA Poster Program 2012

User-Assisted Disparity Maps
Hsin-Yi Chen, Yi-Shan Lin, I-Chao Shen, Sheng-Jie Luo, Wen-Huang Cheng and Bing-Yu Chen
Pacific Graphics 2012 short paper

MusicSpace: You "Play" The Music
Chun-Yu Tsai, Hung-Jung Lin, Tzu-Hao Kuo, Kai-Yin Cheng, I-Chao Shen, Bing-Yu Chen, and Rung-Huei Liang
ACM SIGGRAPH Poster Program 2010

Patent

Smoothing images using machine learning
Nathan A Carr, Zhaowen Wang, Duygu Ceylan, I-Chao Shen
United States Patent, No. 9799102, issued October 24, 2017.

Awards and Grants

IPPR Best Ph.D. dissertation award, Honorable mention *2021*

AIP Challenge Researcher, Japan Science and Technology Agency (JST), Japan, *2021 - 2022*

JSPS Grant-in-Aid for Scientific Research for JPSP foreign fellow, Japan, *2021 - 2023*

JSPS Postdoctoral Fellowship for Foreign Researchers *2020 -*

MediaTek Fellowship *2017 - 2020*

Invited Talks

2D Visual Content Design Driven by Human-Guided Optimization, *Apr. 2021*
The University of Tokyo

Per Garment Capture and Synthesis for Real-time Virtual Try-on, *Sep. 2021*
JST CREST 8th Research Area Meeting

Media

Per Garment Capture and Synthesis for Real-time Virtual Try-on *2021, 2022*
- BS フジ - ガリレオ X　第 259 回「現🄵空間 × 🄵想空間二つの世界を重ねる最新技術」(JP)
- JST News
- NIKKEI (JP)
- ZAIKEI (JP)
- TechCrunch Japan (JP)
- Tii 技術情報 (JP)
- Independent TV (UK)

Professional Services

- **Reviewer:**
  - SIGGRAPH, SIGGRAPH ASIA
  - Eurographics
  - CHI
  - Pacific Graphics
  - CAD/Graphics
  - Transaction on Multimedia
  - VRST
  - WACV